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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,932	08/09/2006	Brian J. Fielding	2004UR003	2472

7590 10/06/2008
J. Paul Plummer
Exxon Mobil Upstream Research Company
P.O. Box 2189 (CORP-URC-SW337)
Houston, TX 77252

EXAMINER

DUONG, DIEU HIEN

ART UNIT	PAPER NUMBER
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2821

MAIL DATE	DELIVERY MODE
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10/06/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,932	Applicant(s) FIELDING ET AL.	
	Examiner DIEU HIEN T. DUONG	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-12 and 14 is/are rejected.
- 7) ☒ Claim(s) 4-7 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/09/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Application

1. This Office Action is a response to Applicants' communication filed 08/09/2006. In virtue of this communication, claims 1-14 are currently presented in the instant application.

Inventorship

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Information Disclosure Statement

3. The information disclosure statement(s) (IDS) submitted on 08/09/2006 in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is considered by the examiner.

If applicant is aware of any prior art or any other co-pending application not already of record, he/she is reminded of his/her duty under 37 CFR 1.97 to disclose the same.

Drawings

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4. The drawing submitted 08/09/2006 is accepted as part of the formal application.

Specification

5. The abstract of the disclosure is objected to because the abstract is not within the range of 50 to 150 words in length.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3, 8-9, 10-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacGregor et al. (GB 2,390,904 A), hereinafter "MacGregor" in view of Gerhard (US 5,933,117).

Regarding claims 1 and 10, MacGregor discloses, in Figure 2A, a system for maintaining a dipole antenna in a substantially vertical orientation and at a substantially constant depth when towed submerged in water, comprising a source (23) of vertical tension on the antenna (22); a towline (16) attached to a tow vessel (14) at one end, said towline (16) having a length determined by the constant depth; a negatively buoyant tow body (19) attached to the other end of the towline (16) and to the antenna (22); and a source of a balancing force to make the net vertical force on the submerged antenna substantially zero.

MacGregor does not disclose the dipole antenna being flexible.

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Gerhard discloses, in col. 1, lines 39-41, the antenna dipole being flexible.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the dipole antenna of MacGregor with the dipole antenna being flexible as taught Gerhard doing so would provide a antenna system with capability that can be launched under sea conditions at depth without danger of being detect (See col. 1, lines 39-41).

Regarding claims 2 and 11, as applied to claim 1, MacGregor/Gerhard disclose, (Gerhard, Figures 2), wherein the source of vertical tension is an upward force source and an offsetting downward force source, said two forces having magnitudes sufficiently large to pull the antenna into substantially vertical configuration, and differing in magnitude by an amount substantially equal to said balancing force.

Regarding claims 3 and 12, as applied to claim 2, MacGregor/Gerhard disclose, (Gerhard, Figure 2), wherein the upward force source is at least one of the following sources of force, attached to one end of the antenna (22)

- (a) a kite;
- (b) a parachute;
- (c) a thruster;
- (d) a water wing;
- (e) a buoyancy device;
- (f) the towline (16);

and the downward force source is at least one of the following sources of force, attached to the other end of the antenna (22):

- (a) a weight (23);
- (b) a thruster;
- (c) a water wing.

Regarding claims 8 and 14, as applied to claim 1, MacGregor/Gerhard disclose, (Gerhard, Figure 2), wherein the antenna (220 is a variable density antenna, said density variability being designed to provide the vertical tension and the balancing force.

Regarding claim 9, as applied to claim 1, MacGregor discloses, in Figure 2, wherein the tow body (14) provides a place for equipment such as communication, positioning and measurement equipment.

Allowable Subject Matter

8. Claims 4-7 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest a system for maintaining a flexible dipole antenna a substantially vertical oriented and at a substantially constant depth when towed submerged in water comprising at least two tag lines interposed between the antenna and the tow body, each tag line being attached at one end to the tow body and at the other end to separated locations on the antenna.

Inquiry

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIEU HIEN T. DUONG whose telephone number is (571)272-8980. The examiner can normally be reached on Monday - Friday, from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Trinh Vo Dinh/

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Primary Examiner, Art Unit 2821